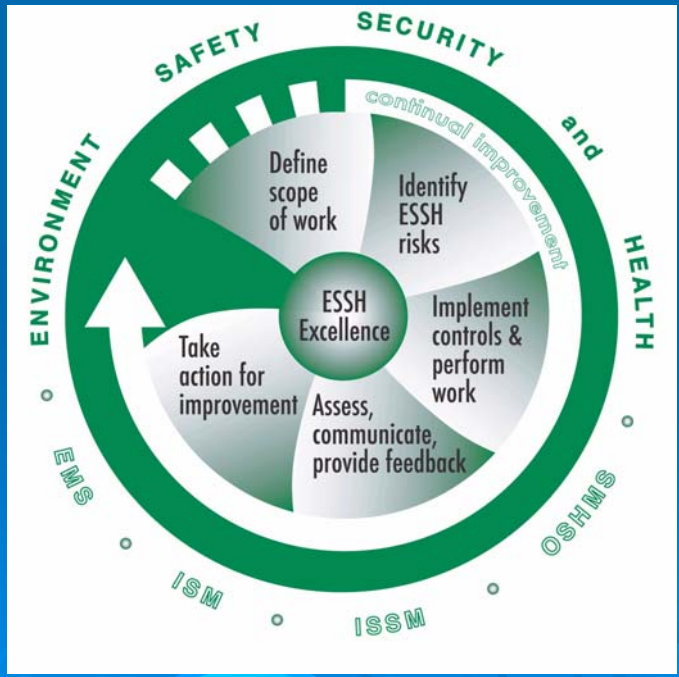
Collider Accelerator Department

Welcome to:

Occupational Health and Safety Management Systems

The Basics



Being A Little Safe Doesn’t Count

Actions Must Back Up Words

#1 of 5 Fundamental Beliefs: Safety Is An Overarching Priority

#2 of 5 Fundamental Beliefs: All Injuries Can Be Prevented

#3 of 5 Fundamental Beliefs:
Excellence in safety is compatible with excellence in other business parameters such as quality and productivity

#4 of 5 Fundamental Beliefs:
Like quality, safety must be made an integral part of every job. “Do it right the first time.”

#5 of 5 Fundamental Beliefs: Good safety is “mainly in the head”

Preparing for the OHSAS 18001 Audit

- Today we will review
  - basic safety information
  - basic audit information and auditor questions
  - tips if you are audited
  - job risk assessments (JRA)
  - communications
  - ESSH policy
  - OSH hazards and controls
  - your responsibilities
  - injury prevention
  - return to work
  - targets and objectives

Why are we being audited AGAIN?

- BNL has decided to improve their safety by implementing a program similar to EMS and get registered under the OHSAS 18001 standard by an outside organization
- This is NOT EMS or ISM
- This is being done as a BNL initiative, no external drivers

Benefits of OSHAS18001

- Helps eliminate or minimize risk to employees, contactors, guests, etc. who may be exposed to OSH risks
- People go home the same way they arrived
- Helps reduce costs
- Enhances credibility with customers

What is covered in an OHSAS audit?

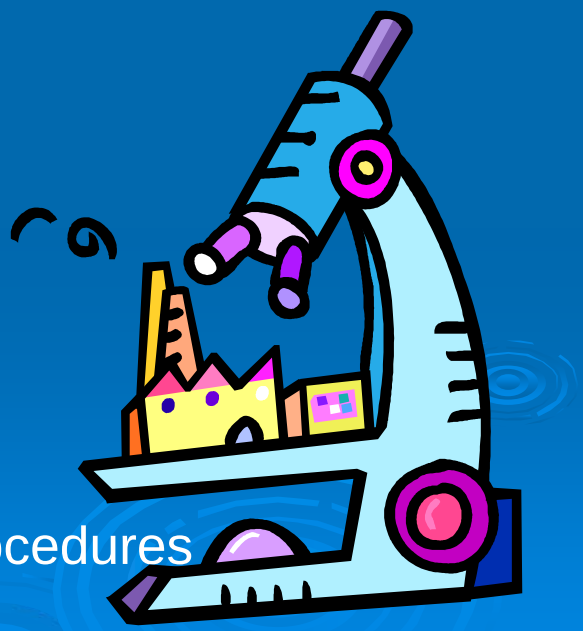
- The registrar evaluates OSH system at:
  - the Laboratory level
  - the Department level
  - the work area level

What is covered in an OHSAS audit?

- Audits typically involve:
  - review of documents
  - review of other management systems related to the OSH
  - facility walkthroughs
  - interviews at all levels of the organization
  - review of jobs and hazards in the field
  - verifying procedures are reviewed and approved
  - verifying that procedures are followed
  - verifying everyone knows the ESSH policy

What is covered during an interview?

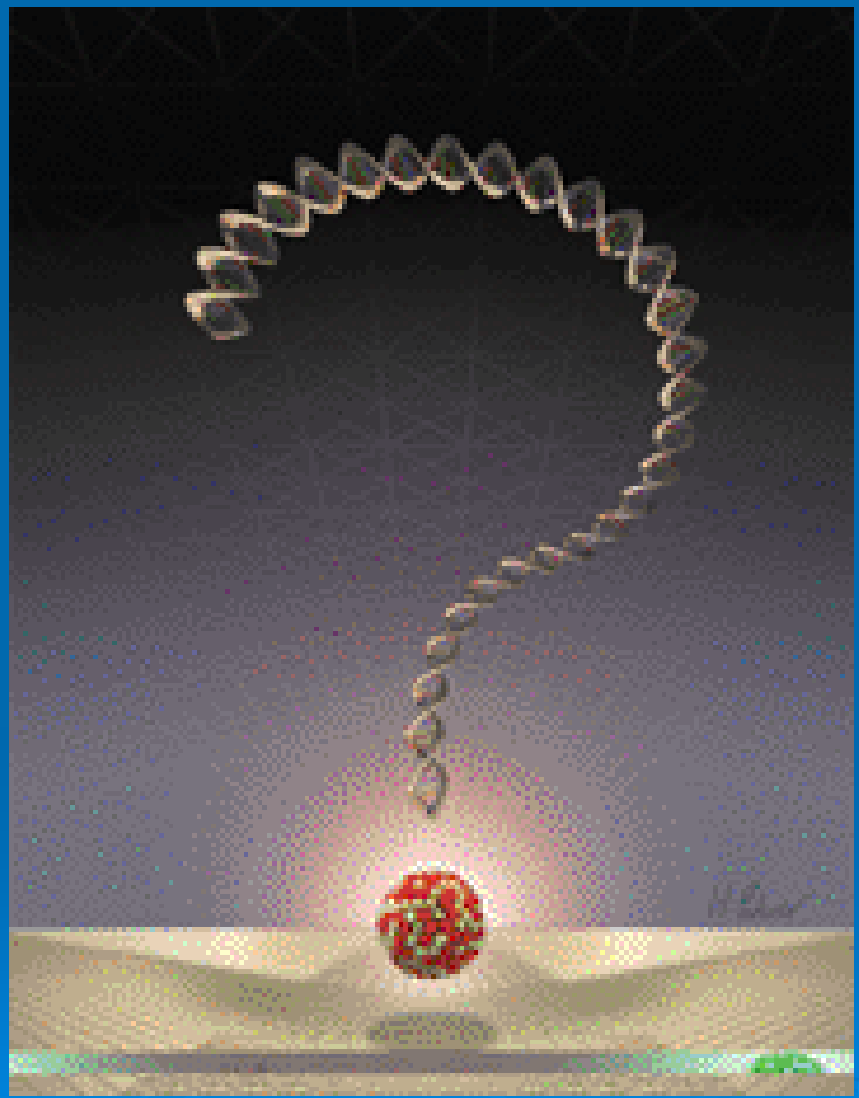
- Management interviews focus on:
  - OSH objectives and targets
  - roles and responsibilities
  - resources associated with the OSH system
- Staff interviews focus on:
  - awareness of the OSH policy
  - awareness of job risks
  - how staff learn about requirements
  - objectives and targets
  - training and communication
  - corrective and preventive action
  - use of OPM and Group (derivative) procedures



Jack Be Quick

What If?

Questions to expect during an OSH audit



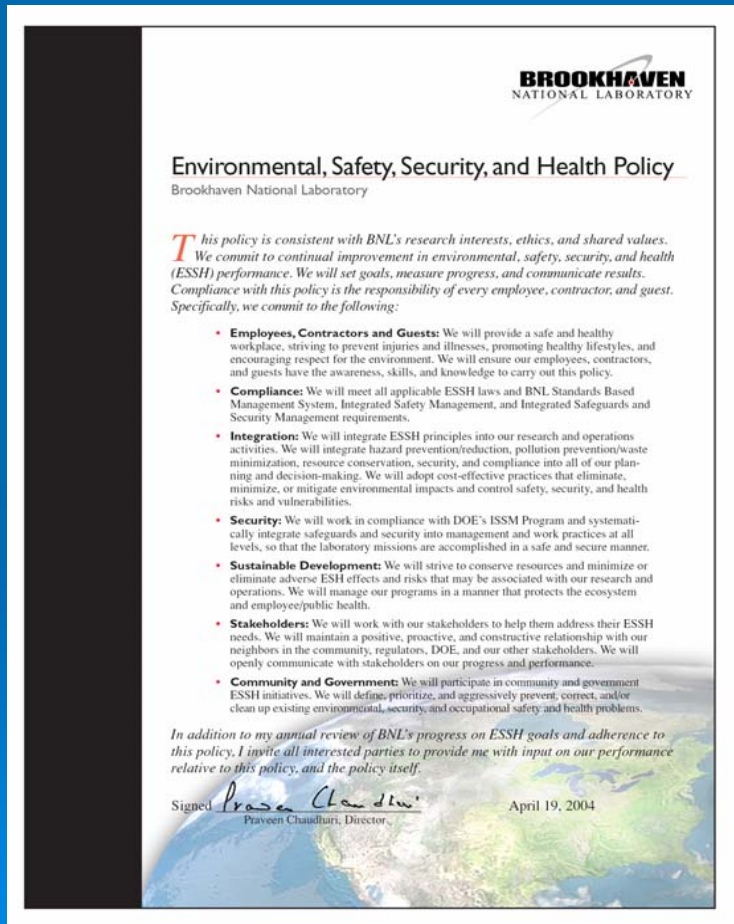
What is the main commitment in the BNL ESSH Policy?

Provide a safe and healthy workplace

1. We are all responsible for safety
2. Consider the safety of others
3. Integrate ESSH into our research and operations
4. Comply with BNL ESSH requirements
5. Reduce risks, conserve resources, prevent pollution
6. Assist stakeholders with their ESSH needs
7. Participate in community and government initiatives

What aids may be used to explain the ESSH Policy?

- Badge-cards are available
- Show the written policy posted in B911 Lobby



BROOKHAVEN NATIONAL LABORATORY

Environmental, Safety, Security, and Health Policy

Brookhaven National Laboratory

This policy is consistent with BNL's research interests, ethics, and shared values. We commit to continual improvement in environmental, safety, security, and health (ESSH) performance. We will set goals, measure progress, and communicate results. Compliance with this policy is the responsibility of every employee, contractor, and guest. Specifically, we commit to the following:

- **Employees, Contractors and Guests:** We will provide a safe and healthy workplace, striving to prevent injuries and illnesses, promoting healthy lifestyles, and encouraging respect for the environment. We will ensure our employees, contractors, and guests have the awareness, skills, and knowledge to carry out this policy.
- **Compliance:** We will meet all applicable ESSH laws and BNL Standards Based Management System, Integrated Safety Management, and Integrated Safeguards and Security Management requirements.
- **Integration:** We will integrate ESSH principles into our research and operations activities. We will integrate hazard prevention/reduction, pollution prevention/waste minimization, resource conservation, security, and compliance into all of our planning and decision-making. We will adopt cost-effective practices that eliminate, minimize, or mitigate environmental impacts and control safety, security, and health risks and vulnerabilities.
- **Security:** We will work in compliance with DOE's ISSM Program and systematically integrate safeguards and security into management and work practices at all levels, so that the laboratory missions are accomplished in a safe and secure manner.
- **Sustainable Development:** We will strive to conserve resources and minimize or eliminate adverse ESH effects and risks that may be associated with our research and operations. We will manage our programs in a manner that protects the ecosystem and employee/public health.
- **Stakeholders:** We will work with our stakeholders to help them address their ESSH needs. We will maintain a positive, proactive, and constructive relationship with our neighbors in the community, regulators, DOE, and our other stakeholders. We will openly communicate with stakeholders on our progress and performance.
- **Community and Government:** We will participate in community and government ESSH initiatives. We will define, prioritize, and aggressively prevent, correct, and/or clean up existing environmental, security, and occupational safety and health problems.

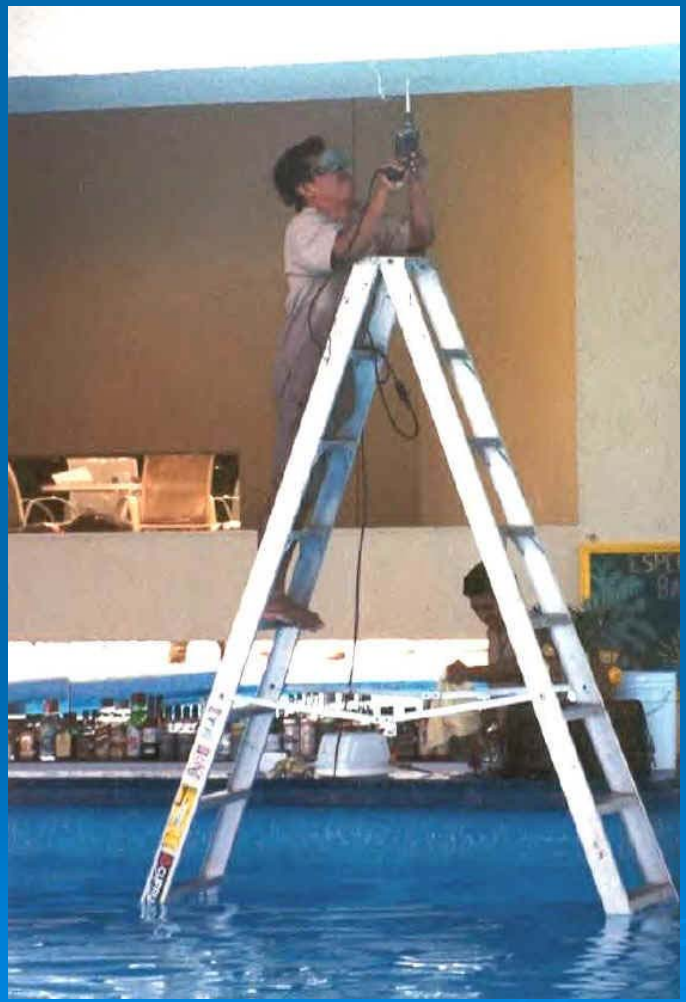
In addition to my annual review of BNL's progress on ESSH goals and adherence to this policy, I invite all interested parties to provide me with input on our performance relative to this policy, and the policy itself.

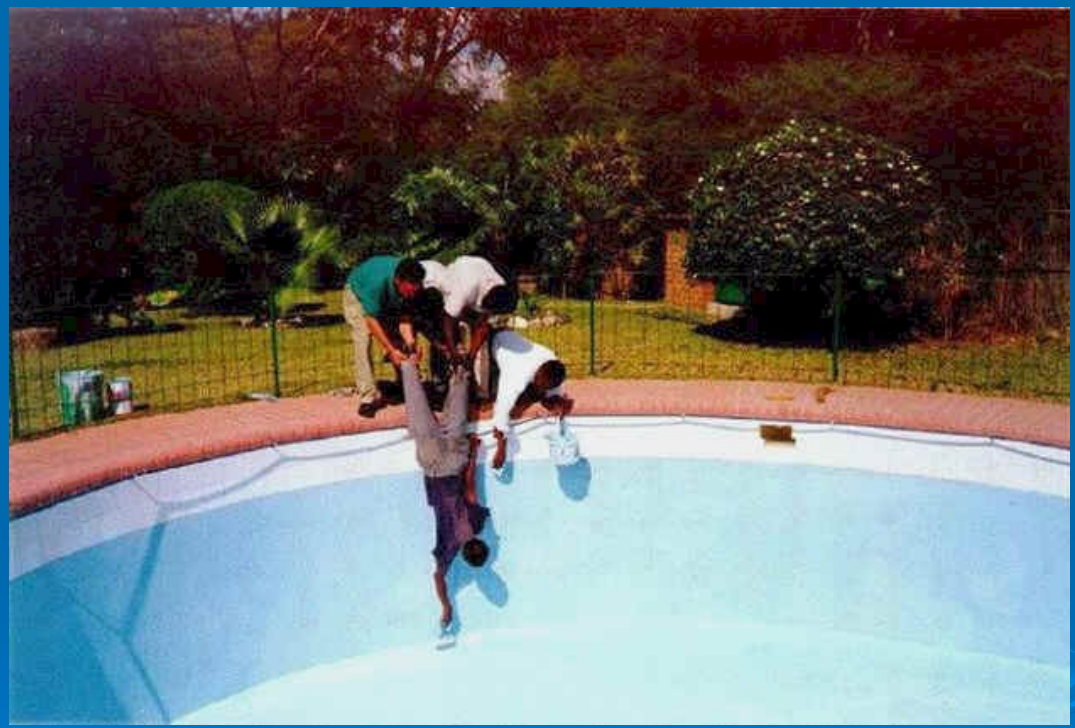
Signed Praveen Chaudhuri

Praveen Chaudhuri, Director

April 19, 2004

Pool Anyone??





List of everyday things to be careful when doing:

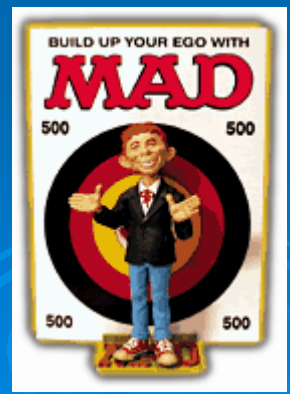
1. Drinking a cup of hot coffee (burn hazard)
2. Eating donuts (choking hazard)
3. Cutting the crust off your PB & J (cutting hazard)
4. Driving a great big bomb around (boom hazard)

How do we identify and control OSH risks?

- OSH risks are identified and controlled through:
  - work planning
  - weekly meetings, including 5 minute safety discussion
  - use of approved procedures
  - C-AD and BNL safety committee reviews
  - C-AD Safety Assessment Document
  - facility and job risk assessments
  - accelerator and experiment ESH reviews
  - Tier 1 inspections
  - assessments and surveillances
  - self-evaluations

What Hazards are present at C-AD facilities?

- C-AD facility hazards — **know which ones apply to your Group**:
  - ionizing and non-ionizing radiation
  - hazardous, radioactive or toxic materials
  - electrical energy
  - magnetic fields
  - flammable, combustible and explosive gases and liquids
  - oxygen deficiency
  - kinetic and potential energy
  - thermal energy
  - cryogenic temperatures
  - noise
  - protracted/irregular hours
  - housekeeping
  - others……..



Eyewash Eyesore

Wear the Right PPE

How can you express your OSH concerns within C-AD?

- Your supervisor
- Management open door policy
- Worker Occupational Safety and Health (WOSH) Committee
  - Meets quarterly
  - Consists of representatives from all C-AD sections and groups, and Magnet Division
  - Reviews injury data, critiques, occurrences, worker feedback, programs, hazard identification, risk assessments, etc.
- ESH Coordinator (Asher Etkin)
- Weekly meetings – 5 minute safety discussion
- Building 911 suggestion box
- Attend quarterly safety initiatives
- Others…….

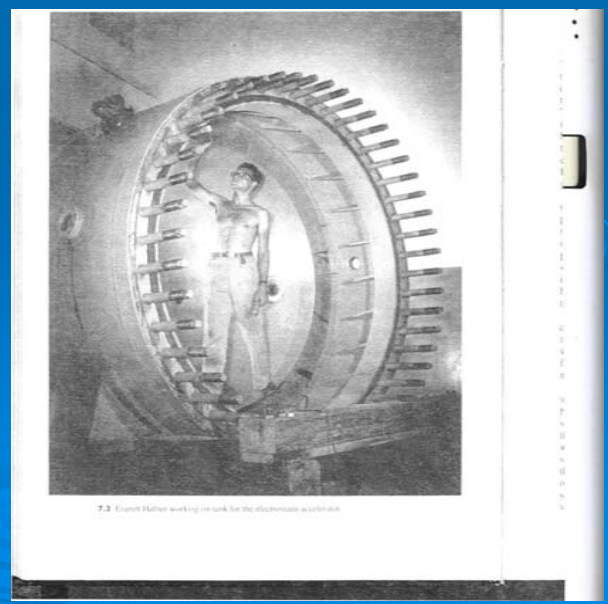
Your OSH Management Representatives

- BNL Level – Jim Tarpinian, Assistant Laboratory Director for ESHQ

- C-AD – Ed Lessard, Associate Chair for ESHQ and C-AD OSH Mgmt Representative

What is a Job Risk Assessment?

- A way to find weaknesses in the safety of a facility, area or job
- Workers are involved and input is welcome
- Documented and reviewed annually



JRA

Job Risk Analysis

Name(s) of Risk Team Members: E. Lessard and D. Passarello	Point Value → Parameter ↓	1	2	3	4	5
Job Title: Cable Pulling Job Number or Job Identifier: JRA 12	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Description: Removing cable from cable tray or adding new cable to tray in various locations throughout the complex.	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training and Procedures List (optional): Approved by: *E. Lessard* Date: 6-30-04 Rev. #: 0	Likelihood (D)	Impossible	Unlikely	Possible	Probable	Multiple

Stressors (if applicable, please list all): Unwilling helpers, heat	Reason for Revision (if applicable):	Comments:

			Before Additional Controls						After Additional Controls						
Job Step / Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	% Risk Reduction
LOTO Power to Cables in Tray	Electrocution	Work planning, LOTO training	N	2	1	5	2	20								
Pull In or Remove AC or DC Cables	Being struck against an object - cuts and skin abrasions from working in tight spaces	Knee and elbow pads, steel-toe shoes, gloves	Y	5	1	3	4	60	Purchase gloves that allow one to feel cable ties, thus no need to keep removing gloves	Y	5	1	3	3	45	25%
Pull In or Remove AC or DC Cables	Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, carrying or throwing of an object	Team coordination to share the pulling forces equally, more guys working together leads to less strain	Y	5	1	3	4	60	Recommend to management that a regular team be used for cable pulls. See Further Description below.	Y	5	1	3	3	45	25%
Pull In or Remove AC or DC Cables	Being struck by an object, such as a tool falling on a worker from above	Safety glasses, hard hats	Y	5	1	3	3	45								
Pull In or Remove AC or DC Cables	Falls to lower level, such as falling from a ladder or over a railing	Fall protection (railings or scaffolding or tie-offs or man-lifts), OSHA compliant ladders, barricade around work area	Y	5	1	3	4	60	On rare occasions, men have to stand on cable tray. This type of work should be considered high hazard and not be done	Y	5	1	3	3	45	25%

JRA

Pull In or Remove AC or DC Cables	Contact with temperature – extremes that result in such injuries as heat exhaustion, frost bite or burns	Fans indoors, water outdoors	Y	5	1	3	3	45	Supply water to cable pull team	Y	5	1	3	2	30	33%
Pull In or Remove AC or DC Cables	Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling	Team coordination to share the pulling forces equally	Y	5	1	3	4	60	Recommend to management that a regular team be used for cable pulls. See Further Description below.	Y	5	1	3	3	45	25%
Pull In or Remove AC or DC Cables	Falls on same level	Shoes with slip resistant soles	Y	5	1	3	4	60	Purchase shoes with slip resistance soles, current oil resistant soles become hardened and get slippery	Y	5	1	3	3	45	25%
Pull In or Remove AC or DC Cables	Tics	White suits, tic spray	Y	5	1	3	3	45								
Moving Cable Spools and Pulling Cable Off Spools	Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling	Use experienced personnel who know how to move a spool with little manual force, bring cable close to work area using lifting equipment, use jacks to hold cable off ground during long pull	Y	5	1	3	4	60	Investigate the use of a cable spool trailer that can be towed by a vehicle	Y	5	1	3	3	45	25%
Connect AC or DC Cables	Becoming caught in or compressed by equipment	Following manufacturer's instructions for safe use of hydraulic crimper, PPE.	N	2	1	5	2	20								

Further Description of Controls Added to Reduce Risk:

The current practice of supplementing the regular 2-man cable-pull team with local help often leads to unwilling workers who don't share the weight, which leads to back injuries and strains to other people on the pull to react to the extra forces. Unwilling workers feel this job is beneath their status. Inexperienced people are not aware of the best way to position their bodies for this job. Experienced people know how to lift cables, work as a team and move cable rolls with relative ease.

Man lifts should be bettor maintained. Recent experience shows that man lifts are being brought in by crane when needed but when they are used to help reach a cable tray, the man-lifts do not work. This slows a job down for days and creates job stressors such as time pressure and reduced number of breaks. Breaks are important for the crew since they must often take a few minutes to gather their strength after a difficult pull. Man-lifts should be checked and be fully operational before being lifted into cable-pull work areas.

Radio communications between team members inside and outside shielded areas is difficult using the F2 frequency. This is due to a lot of traffic on that frequency when a fire/rescue call goes out. Investigate alternate communications. Good communications are needed to share the pulling equally and avoid strains and back injuries.

*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable

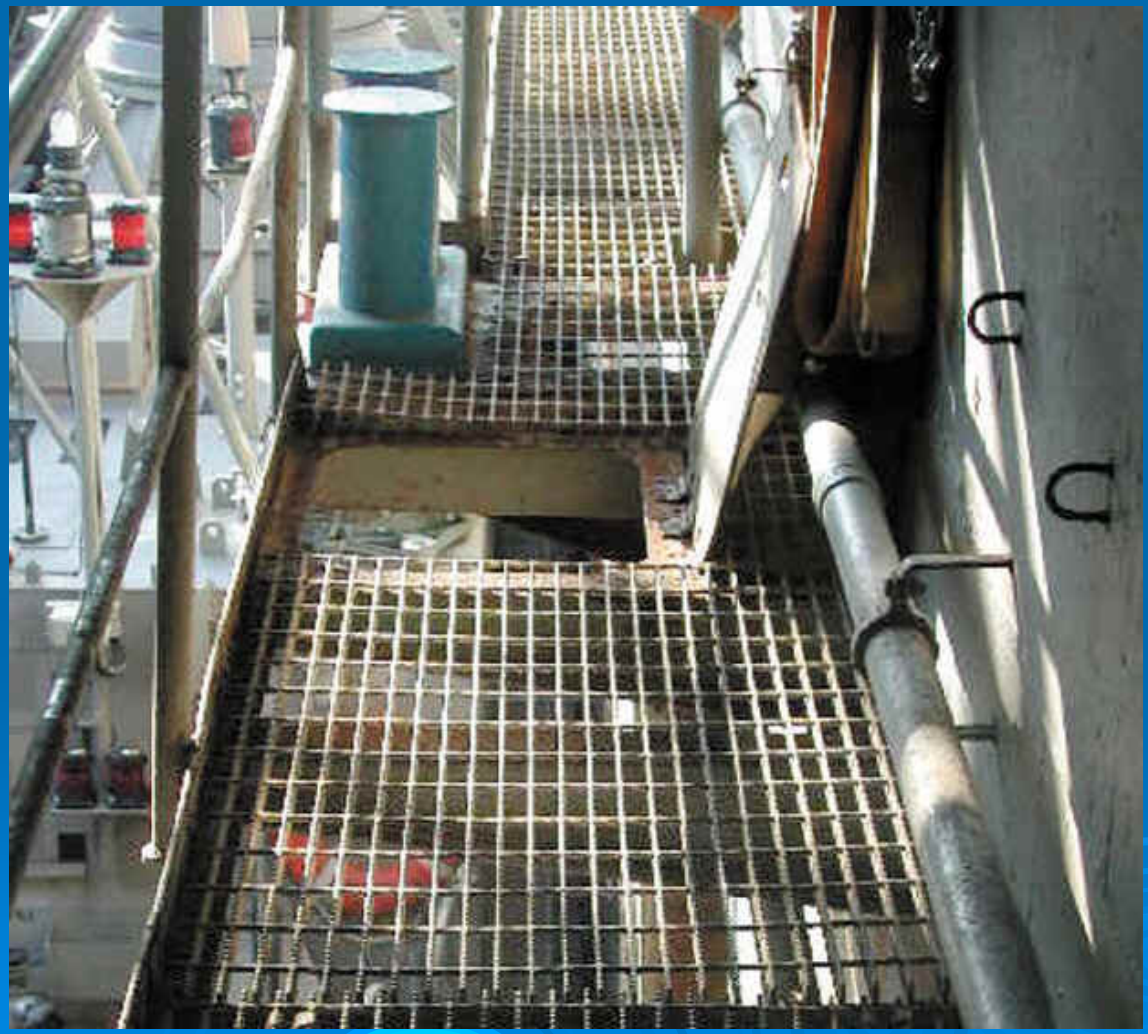
New Controls To Be Added as Result of JRA for Cable Pulling

- New gloves that allow one to feel the cable
- Regular cable pulling team with written procedure
- Slip resistant shoes
- Standing on cable tray without fall protection prohibited
- Drinking water supplied to cable pullers when needed

How do we PREVENT injuries and illnesses?

- The primary ways to prevent injuries and illnesses are:
  - eliminate the hazard
  - engineered controls
  - administrative controls
    - work planning and review, pre-job briefings
    - facility and job risk assessments
    - training
    - following C-A Operating Procedures, SBMS Subject Areas (LOTO, postings, etc.)
    - preventive maintenance
    - communication and feedback
    - stop work process
  - use of personnel protective equipment (PPE)

Prevent Injuries -Watch Out For The Other Guy



Prevent Injuries – Don’t Try To Get It Done Fast

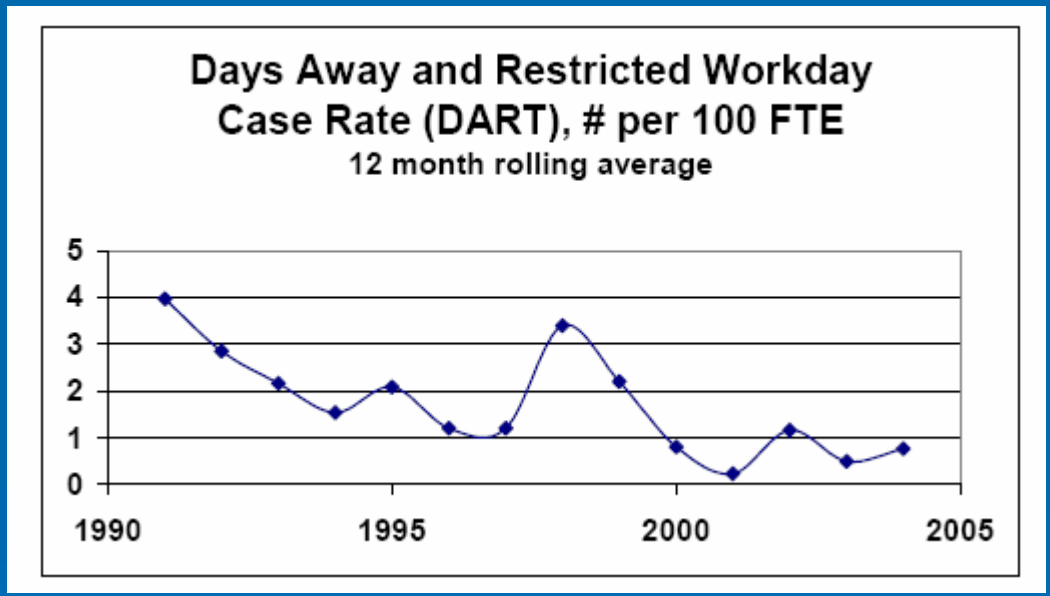
Key Elements of C-AD Return to Work Policy

- If an illness or accident causes an absence, then worker must notify supervisor right away
  - don’t wait until you return to work
- Supervisor attempts to communicate with employees who do not show up
- Supervisor must participate in accident/illness investigation
- OMC and C-A management must evaluate potential for restricted duty
- Full policy is on the web

What could potentially happen if procedures are not followed?

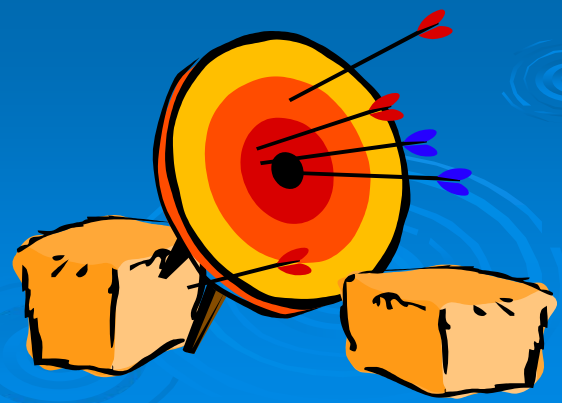
- Resource impact
  - consumption of YOUR time correcting the problem
  - personnel injury or illness, $$$ for worker compensation and/or medical treatment
- Regulatory fines
- Operations shut down temporarily or permanently
- Loss of trust with DOE, the community, regulators, and partners
- Disciplinary action, up to and including termination

Climbing The Ladder To Success



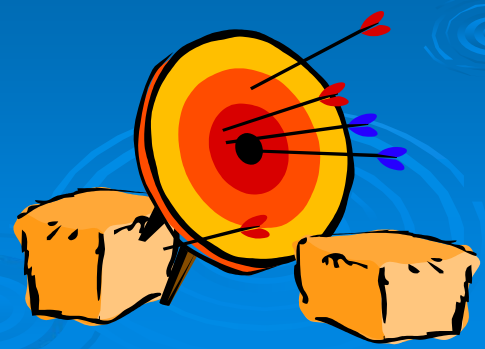
What are C-AD's OSH objectives (goals)?

- An injury free workplace
- Compliance with OSH requirements found in SBMS
- Workers consulted and encouraged to participate in OSH Management System
- Maintain training requirements >95% complete
- Close out WOSH Committee issues in timely manner consistent with issue's risk
- Get registered to OHSAS 18001 in FY04



What are C-AD's OSH targets ?
(Targets help dept. meet the objectives)

- Reduce year over year injury/illness rates
- Complete Job Risk Assessments (JRA) for the C-AD
- Maintain an efficient and functioning WOSH committee through participation
- Be prepared for 3rd party ISO18001 registration by 9/04
- Define the OSH requirements for procured items
- Get Tier 1 Committee trained on OSHA regulations
- Close out WOSH issues within 90 days
- Close out Tier 1 issues within designated times
- Implement OSHA training for Building Managers
- Conduct a joint OSH, EMS and Self-Assessment Management Review



What are YOUR responsibilities with regard to the OSH Program?

- **Comply** with Laboratory policies, standards, procedures
- **Maintain** your training up-to-date
- **Identify** hazards and impact of work
- **Help** achieve objectives and targets related to your work
- **Provide** input on controls/work practices to minimize risk
- **Apply** risk minimization techniques to your work
- **Respond** to emergency situations, alarms, or occurrences as appropriate

How do you find out about new OSH requirements?

- Training
- Your supervisor
- C-A operating procedures
- SBMS including the SBMS subscription service

What response/action would you take in an emergency?

- Be prepared:
  - complete training
  - know the indoor assembly, outdoor assembly, and shelter-in-place areas
- In an actual emergency:
  - activate alarms
  - report the emergency - call 911 (2222)
  - report to the outdoor assembly area if the building alarm bell sounds
  - report to indoor assembly if the steady site siren signal sounds

How do contractors who perform work in your area know about C-A/BNL rules?

- Requirements are included in the contract
- Work planning or pre-job briefings provide specifics
- Training is provided

Step Right Up

Are any OSH measurements taken that require calibrated equipment?

- At C-AD, oxygen monitors
- At BNL, radiation and industrial hygiene monitors

Time to Relax

Group Quiz

- What is the ESSH policy?
- Name the 5 fundamental beliefs about excellence in safety
- What are your responsibilities with regard to the OSH program?
- How do we prevent injuries?
- How do you find out about new OSH requirements?
- Name two OSH targets or objectives at C-AD
- How do we identify and control OSH risks?
- What is a Job Risk Assessment?
- Who are BNL and C-AD OSH Management Representatives?
- How can you express your concerns about OSH to management?

Questions ?